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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,069	07/21/2003	Rakesh Agrawal	ARC920030034USI	6946
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FREDERICK W. GIBB, III Gibb & Rahman, LLC 2568-A RIVA ROAD SUITE 304 ANNAPOLIS, MD 21401			EXAMINER PADMANABHAN, KAVITA	
			ART UNIT 2161	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/624,069

Applicant(s)

AGRAWAL ET AL.

Examiner

Kavita Padmanabhan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Status of Claims*

1. Claims 1-24 are pending.
2. Claims 1-24 are rejected.

### *Continued Examination Under 37 CFR 1.114*

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/26/06 has been entered.

### *Oath/Declaration*

4. The declaration under 37 CFR 1.132 filed September 26, 2006 is insufficient to overcome the rejection of claims 1-24 over the publication "Randomization in Privacy Preserving Data Mining," December 2002, ACM SIGKDD Explorations Newsletter, Volume 4, Issue 2, pages 43-48 by Alexandre Evfimievski under 35 U.S.C. 102(a) as set forth in the previous Office action dated 6/28/2006 because (A) it is not properly executed, (B) does not establish that the reference is a publication of Applicant's own invention, and (C) does not provide sufficient facts and documentary evidence supported by actual proof.

(A) **Formalities:** The declaration is ineffective because it was not properly executed. It has not

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been signed by all inventors nor is it accompanied by the necessary proof required in order to accept a declaration by less than all the named inventors.

**716.10 Attribution**

Under certain circumstances an affidavit or declaration may be submitted which attempts to attribute an activity, a reference or part of a reference to the applicant. If successful, the activity or the reference is no longer applicable. When subject matter, disclosed but not claimed in a patent application filed jointly by S and another, is claimed in a later application filed by S, the joint patent or joint patent application publication is a valid reference available as prior art under 35 U.S.C. 102(a), (e), or (f) unless overcome by affidavit or declaration under 37 CFR 1.131 showing prior invention (see MPEP § 715) or an **unequivocal declaration by S under 37 CFR 1.132 that he or she conceived or invented the subject matter disclosed in the patent or published application**. Disclaimer by the other patentee or other applicant of the published application should not be required but, if submitted, may be accepted by the examiner.

...

An uncontradicted "unequivocal statement" from the applicant regarding the subject matter disclosed in an article, patent, or published application will be accepted as establishing inventorship. In re DeBaun, 687 F.2d 459, 463, 214 USPQ 933, 936 (CCPA 1982). **However, a statement by the applicants regarding their inventorship in view of an article, patent, or published application may not be sufficient where there is evidence to the contrary.** Ex parte Kroger, 218 USPQ 370 (Bd. App. 1982) (a rejection under 35 U.S.C. 102(f) was affirmed notwithstanding declarations by the alleged actual inventors as to their inventorship in view of a nonapplicant author submitting a letter declaring the author's inventorship); In re Carreira, 532 F.2d 1356, 189 USPQ 461 (CCPA 1976) (disclaiming declarations from patentees were directed at the generic invention and not at the claimed species, hence no need to consider derivation of the subject matter).

**37 CFR 1.47 Filing when an inventor refuses to sign or cannot be reached.**

(a) If a joint inventor refuses to join in an application for patent or cannot be found or reached after diligent effort, the application may be made by the other inventor on behalf of himself or herself and the nonsigning inventor. **The oath or declaration in such an application must be accompanied by a petition including proof of the pertinent facts, the fee set forth in § 1.17(g), and the last known address of the nonsigning inventor.** The nonsigning inventor may subsequently join in the application by filing an oath or declaration complying with § 1.63.

Applicant has not met the necessary criteria above.

(B) **Reference as Applicant's own invention:** The declaration does not establish that the reference is a publication of applicant's own invention.

**715.01(c) Reference Is Publication of Applicant's Own Invention**

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Unless it is a statutory bar, a rejection based on a publication may be overcome by a showing that it was published either by applicant himself/herself or on his/her behalf. Since such a showing is not made to show a date of invention by applicant prior to the date of the reference under 37 CFR 1.131, the limitation in 35 U.S.C. 104 and in 37 CFR 1.131(a)(1) that only acts which occurred in this country or in a NAFTA or WTO member country may be relied on to establish a date of invention is not applicable. Ex parte Lemieux, 115 USPQ 148, 1957 C.D. 47, 725 O.G. 4 (Bd. App. 1957); Ex parte Powell, 1938 C.D. 15, 489 O.G. 231 (Bd. App. 1938). See MPEP § 716.10 regarding 37 CFR 1.132 affidavits submitted to show that the reference is a publication of applicant's own invention.

#### I. >< CO-AUTHORSHIP

Where the applicant is one of the co-authors of a publication cited against his or her application, he or she may overcome the rejection by filing an affidavit or declaration under 37 CFR 1.131. Alternatively, the applicant may overcome the rejection **by filing a specific affidavit or declaration under 37 CFR 1.132 establishing that the article is describing applicant's own work.** An affidavit or declaration by applicant alone indicating that applicant is the sole inventor and that the others were merely working under his or her direction is sufficient to remove the publication as a reference under 35 U.S.C. 102(a). In re Katz, 687 F.2d 450, 215 USPQ 14 (CCPA 1982).

Applicant has not met the criteria above. A declaration signed by two of the three joint inventors has been submitted stating that one of the joint inventors, Evfimievski, is the sole author of the publication used in the rejections of claims 1-24 of the present application, and that the portions of the publication relied upon in the rejections are based on a previous publication, "Privacy Preserving Mining of Association Rules" (July 2002) of which Evfimievski is a co-author, along with three others, two of which are also inventors of the present application. The declaration also states that the co-author, Gehrke, of "Privacy Preserving Mining of Association Rules" (July 2002), is not an inventor of claims 1-24 of the present application. A declaration has also been submitted by Gehrke declaring that while he is a co-author of "Privacy Preserving Mining of Association Rules (July 2002)", he is not an inventor of claims 1-24 of the present application. However, the applicant of the present application consists of three inventors, and one of the inventors listed, Agrawal, has not submitted a signed declaration. Moreover, the rejection of claims 1-24 of the present application are based on the publication "Randomization in Privacy

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Preserving Data Mining” (December 2002) and not on “Privacy Preserving Mining of Association Rules (July 2002)”, and the source of the portions of the publication relied upon are not limited to “Privacy Preserving Mining of Association Rules” (July 2002). They also include, for example, “Maintaining data privacy in association rule mining,” by S.J. Rizvi and J.R. Haritsa (see page 44, right column, last paragraph, line 1 of “Randomization in Privacy Preserving Data Mining” (December 2002)). None of the authors of the Rizvi et al. paper have submitted declarations disclaiming the content of the present application nor has the present applicant claimed inventorship over the material discussed in the Rizvi et al. publication. Therefore, it has not been established that the portions of the publication relied upon in rejections of claims 1-24 originated with or were obtained from the applicant’s own work.

**(C) Facts and Documentary Evidence:** The Declaration is ineffective because it does not provide sufficient facts and documentary evidence supported by actual proof. Applicant does not provide any objective evidence that is factually supported, including evidence that the author(s) of the prior art derived the disclosed subject matter from the applicant.

**716.01(c) Probative Value of Objective Evidence**

**I. >< TO BE OF PROBATIVE VALUE, ANY OBJECTIVE EVIDENCE SHOULD BE SUPPORTED BY ACTUAL PROOF**

Objective evidence which must be factually supported by an appropriate affidavit or declaration to be of probative value includes evidence of unexpected results, commercial success, solution of a long-felt need, inoperability of the prior art, invention before the date of the reference, and allegations that the author(s) of the prior art derived the disclosed subject matter from the applicant. See, for example, *In re De Blauwe*, 736 F.2d 699, 705, 222 USPQ 191, 196 (Fed. Cir. 1984) (“It is well settled that unexpected results must be established by factual evidence.” “[A]ppellants have not presented any experimental data showing that prior heat-shrinkable articles split. Due to the absence of tests comparing appellant’s heat shrinkable articles with those of the closest prior art, we conclude that appellant’s assertions of unexpected results constitute mere argument.”). See also *In re Lindner*, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972); *Ex parte George*, 21 USPQ2d 1058 (Bd. Pat. App. & Inter. 1991).

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II. >< ATTORNEY ARGUMENTS CANNOT TAKE THE PLACE OF EVIDENCE

The arguments of counsel cannot take the place of evidence in the record. In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). Examples of attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration include statements regarding unexpected results, commercial success, solution of a long-felt need, inoperability of the prior art, invention before the date of the reference, and allegations that the author(s) of the prior art derived the disclosed subject matter from the applicant.

Applicant has not met the criteria above. The source of the portions of the publication “Randomization in Privacy Preserving Data Mining” (December 2002) relied upon in the rejection of claims 1-24 of the present application are not limited to “Privacy Preserving Mining of Association Rules” (July 2002). They also include, for example, “Maintaining data privacy in association rule mining,” by S.J. Rizvi and J.R. Haritsa (see page 44, right column, last paragraph, line 1 of “Randomization in Privacy Preserving Data Mining” (December 2002)). None of the authors of the Rizvi et al. paper have submitted declarations disclaiming the content of the present application nor has the present applicant claimed inventorship over the material discussed in the Rizvi et al. publication. Therefore, it has not been established that the portions of the prior art publication relied upon in the rejections of claims 1-24 were derived from the applicant’s own work.

In view of the foregoing, when all of the evidence is considered, the declaration under 37 CFR 1.132 filed September 26, 2006 is insufficient to overcome the rejection of claims 1-24 over the publication “Randomization in Privacy Preserving Data Mining,” December 2002, ACM SIGKDD Explorations Newsletter, Volume 4, Issue 2, pages 43-48 by Alexandre Evfimievski under 35 U.S.C. 102(a).

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5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. **Claims 1-24** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The basis of this rejection is set forth in a test of whether the invention is categorized as a process, machine, manufacture or composition of matter and if the invention produces a useful, concrete and tangible result. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) are found to be non-statutory subject matter. For a method claim to pass muster, the recited process must produce a useful, concrete and tangible result.

In the instant case, **Claims 1-18** recite methods, but the methods claimed appear to be directed towards abstract ideas and do not produce a useful, concrete and tangible result.

Regarding **claim 1**, while the active method steps recited appear to provide a result that is useful and concrete (i.e., randomly dropping true items, randomly inserting false items, and estimating the support of an association rule whereby privacy breaches are controlled), there does not appear to be a tangible result produced. Firstly, estimating nonrandomized support “so as to recover said association rule” does not require that “said association rule” is actually recovered, but rather constitutes intended use functional language. Furthermore, estimating the support of a rule as recited in the claim still appears to constitute an abstract idea, and not the application of the abstract idea in such a way as to produce a tangible result. **Claims 2-18** are similarly nonstatutory.

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**Claims 19-24** recite a program storage device tangibly embodying a program of instructions to perform a method that is substantially the same as the method recited in claims 1-18. Therefore, these claims are similarly non-statutory for the same rationale.

The examiner will apply prior art to these claims as best understood, with the assumption that applicant will amend to overcome the stated 101 rejections.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

8. **Claims 1-24** are rejected under 35 U.S.C. 102(a) as being anticipated by **Evfimievski, “Randomization in Privacy Preserving Data Mining,” December 2002, ACM SIGKDD Explorations Newsletter, Volume 4, Issue 2, pages 43-48.**

In regards to **claim 13**, **Evfimievski** teaches a computer-implemented method of mining association rules from datasets (**Evfimievski; p43, left column, paragraph 2, lines 13-14 – “an algorithm for mining...”**) while maintaining privacy of individual transactions within said datasets (**Evfimievski; p43, left column, paragraph 3, lines 7-9 – “a solution is preferred...”**) through randomization (**Evfimievski; p44, right column, paragraph 6, lines 1-2 – “consider randomization...”**), said method comprising:

- creating randomized transactions from an original dataset by:

- randomly dropping true items from each transaction in said original dataset  
(Evfimievski; p43, left column, paragraph 3, line 10 – right column, paragraph 1, line 2 – “before sending it’s piece of data...”; p44, right column, paragraph 6, lines 2-4 – “Suppose that each client...”; p45, left column, paragraph 4, lines 7-8 – “A natural way to randomize...”), and
- randomly inserting false items into each transaction in said original dataset  
(Evfimievski; p43, left column, paragraph 3, line 10 – right column, paragraph 1, line 2 – “before sending it’s piece of data...”; p44, right column, paragraph 6, lines 2-4 – “Suppose that each client...”; p45, left column, paragraph 4, lines 7-8 – “A natural way to randomize...”);
- creating a randomized dataset by collecting said randomized transactions (Evfimievski; p45, left column, paragraph 8, lines 1-3 – “In the set T’ of randomized transactions...”);
- collecting said randomized dataset in a database (Evfimievski; p45, left column, paragraph 8, lines 1-3 – “In the set T’ of randomized transactions...”); and
- mining said database to recover an association rule after said dropping and inserting processes by estimating nonrandomized support of said association rule in said original dataset based on randomized support for said association rule in said randomized dataset, wherein, due to said creating of said randomized transactions, privacy breaches of said individual transactions are controlled during said mining (Evfimievski; p45, left column, paragraph 9, line 3 – right column, paragraph 6, line 9 – “Therefore, techniques were developed that allow to estimate...”).

In regards to **claim 14**, **Evfimievski** teaches the method in claim 13, wherein said process of creating randomized transactions comprises per transaction randomizing, such that randomizing operators are applied to each transaction independently (**Evfimievski; p45, left column, paragraph 4, line 13 – paragraph 8, line 11 – “Given a transaction t...”**).

In regards to **claim 15**, **Evfimievski** teaches the method in claim 13, wherein said process of creating randomized transactions is item-invariant such that a reordering of said transactions does not affect outcome probabilities (**Evfimievski; p45, left column, paragraph 4, line 7 – paragraph 8, line 11 – “A natural way to randomize...”**; also, par [0048] of applicant’s specification states that select-a-size operators are item-invariant).

In regards to **claim 16**, **Evfimievski** teaches the method in claim 13, wherein said dropping of said true items and said inserting of said false items are carried out to an extent such that the chance of finding a false itemset in a randomized transaction relative to the chance of finding a true itemset in said randomized transaction is above a predetermined threshold (**Evfimievski; p46, left column, paragraph 3, lines 1-13 – “In order to prevent...”**).

In regards to **claim 17**, **Evfimievski** teaches the method in claim 16, wherein said predetermined threshold provides that the chance of finding a false itemset in said randomized transaction is approximately equal to the chance of finding a true itemset in said randomized

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transaction (Evfimievski; p46, left column, paragraph 3, lines 1-13 – “In order to prevent...”).

In regards to **claim 18**, Evfimievski teaches the method in claim 13, wherein said process of creating randomized transactions is performed independently on said transactions prior to the transactions being collected in said database (Evfimievski; p45, left column, paragraph 8, line 1 – paragraph 9, line 3 – “If different clients have transactions...”).

**Claims 1-6, claims 7-12, and claims 19-24** are each rejected with the same rationale given for claims 13-18, respectively.

#### *Response to Amendment*

9. Applicant's amendments filed 9/26/06 with respect to the abstract have been fully considered. The objection to the abstract has been withdrawn accordingly.

#### *Response to Arguments*

10. Applicant's arguments filed 9/26/06 with respect to claim objections have been fully considered. The objection to claim 7 has been withdrawn accordingly.

11. Applicant's arguments filed 9/26/06 with respect to the 35 U.S.C. 101 rejections of the claims have been fully considered. However, the claims still do not appear to produce a tangible result. Firstly, estimating nonrandomized support “so as to recover said association rule” does not require that “said association rule” is actually recovered, but rather constitutes intended use

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functional language. Furthermore, estimating the support of a rule still appears to constitute an abstract idea, and not the application of the abstract idea in such a way as to produce a tangible result.

12. Applicant's arguments filed 9/26/06 have been fully considered but they are not persuasive.

The applicant argues that the declarations submitted by Evfimievski and Srikant (Exhibit 1) and Gehrke (Attachment C) are sufficient to establish that the relevant portions of the publication used in the rejections of claims 1-24 originated with or were obtained from the applicant's own work. The examiner respectfully disagrees for reasons set forth above.

The applicant further argues that signatures by all of the inventors are not required, since the declarations were filed under 37 CFR 1.132 in order to establish attribution. The examiner respectfully disagrees and refers the applicant to section 716.10 of the MPEP which states in part:

**716.10 Attribution**

Under certain circumstances an affidavit or declaration may be submitted which attempts to attribute an activity, a reference or part of a reference to the applicant. If successful, the activity or the reference is no longer applicable. When subject matter, disclosed but not claimed in a patent application filed jointly by S and another, is claimed in a later application filed by S, the joint patent or joint patent application publication is a valid reference available as prior art under 35 U.S.C. 102(a), (e), or (f) unless overcome by affidavit or declaration under 37 CFR 1.131 showing prior invention (see MPEP § 715) **or an unequivocal declaration by S under 37 CFR 1.132 that he or she conceived or invented the subject matter disclosed in the patent or published application.** Disclaimer by the other patentee or other applicant of the published application should not be required but, if submitted, may be accepted by the examiner.

and to 37 CFR 1.47, which states in part:

**37 CFR 1.47 Filing when an inventor refuses to sign or cannot be reached.**

(a) If a joint inventor refuses to join in an application for patent or cannot be found or reached after diligent effort, the application may be made by the other inventor on behalf of himself or herself and the nonsigning inventor. **The oath or declaration**

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**in such an application must be accompanied by a petition including proof of the pertinent facts, the fee set forth in § 1.17(g), and the last known address of the nonsigning inventor.** The nonsigning inventor may subsequently join in the application by filing an oath or declaration complying with § 1.63.

The examiner asserts that it is clear that to establish attribution the applicant, in this case consisting of three joint inventors, must submit an unequivocal declaration. Furthermore, the examiner asserts that applicant has not provided the documentation necessary to accept the declaration from less than each named inventor. Therefore, the examiner asserts that Rakesh Agrawal's signature is still required.

Furthermore, the examiner asserts that the source of the portions of the publication "Randomization in Privacy Preserving Data Mining" (December 2002) relied upon in the rejection of claims 1-24 of the present application are not limited to "Privacy Preserving Mining of Association Rules" (July 2002). They also include, for example, "Maintaining data privacy in association rule mining," by S.J. Rizvi and J.R. Haritsa (see page 44, right column, last paragraph, line 1 of "Randomization in Privacy Preserving Data Mining" (December 2002)). None of the authors of the Rizvi et al. paper have submitted declarations disclaiming the content of the present application nor has the present applicant claimed inventorship over the material discussed in the Rizvi et al. publication. Therefore, it has not been established that the portions of the prior art publication relied upon in the rejections of claims 1-24 were derived from the applicant's own work.

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*Conclusion*


13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Kavita Padmanabhan** whose telephone number is **571-272-8352**. The examiner can normally be reached on Monday-Friday, 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 571-272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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January 20, 2007

  
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